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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,872	07/11/2005	Patrick Jeambar	3952-79	7903
23117 7590 06/19/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER VANATTA, AMY B				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/541,872

Applicant(s)

JEAMBAR, PATRICK

Examiner

Amy B. Vanatta

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14 is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S508)
- Paper No(s)/Mail Date 081905
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2, 4, 13, and 15-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 is rendered in definite in that it appears to recite a Markush group, however the group is open ended and includes material not actually recited, since the term "comprising" is recited. Thus, line 2 should read as "...chosen from the group consisting of" rather than "comprising".

Claim 2 also recites "the viscose..." without proper antecedent basis.

Claim 2 is also rendered indefinite by the recitation in line 3-4 of "as such or as a mixture". It is unclear whether the mixture referred to is a mixture between members of the Markush group, or whether the materials of the Markush are being mixed with other materials not specifically recited. Thus, the scope of the claim is not ascertainable and it is unclear what with the materials are mixed. Also, it is unclear what is meant by "as such" (line 3).

Claim 4 is indefinite in that it is unclear to what "them" refers (line 4).

Claim 4 is also rendered indefinite by the recitation in line 6 of "the rows themselves being spaced 0.5-2 mm apart". Claim 4 encompasses only one row in each water jet (see line 4), and in this case the recitation of the row spacing is confusing. It is

unclear whether the row spacing of line 6 is the spacing between rows of a water jet (i.e. the jet has more than one row), or between the rows of adjacent water jets. Claim 15 is rendered indefinite for the same reason (see claim 15, lines 5-6).

Claim 13 is indefinite in that the metes and bounds of the claim are not ascertainable, since the claim does not set forth any structure which makes up the claimed installation.

Claim 15 is indefinite in reciting "bonding means by water jets" (line 2), since this bonding means was previously recited in claim 14. Thus, it is unclear whether the bonding means in line 2 of claim 15 is reciting a second bonding means, or is further limiting the bonding means of claim 14.

Also, in claim 15, line 3, "several" renders the claim indefinite in that it is unclear how many injectors constitute "several".

Claim 15 is indefinite in that it is unclear to what "them" refers (line 3).

In claim 17, line 4, it is unclear which web is being referred to by "the web".

In claim 17, lines 4-5, the recitation of "the hydraulic injectors" is confusing, since it is unclear whether this is referring to the previously recited hydraulic injectors of claim 15, or is reciting additional hydraulic injectors.

Claim 18 recites "the drying *unit*" without proper antecedent basis.

Claim 19 recites "the reel-up" without proper antecedent basis. Consistency in claim terminology should be maintained.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 6, 7, 9, 12, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Welchel et al (US 6,022,818).

Welchel discloses a method of making a composite nonwoven including the claimed steps; see Figure 3. Welchel discloses a step of carding a lower web 20 (col. 7, lines 14-16 and 24-26), prebonding the lower web 20 (col. 7, lines 28-29), dispersing natural fibers (see pulp layer 18) into water to form an aqueous dispersion (col. 6, lines 2-15), laying the aqueous dispersion on the carded lower web 20 to form the upper web 18 (see Fig. 3), filtering excess water through the lower web (through forming belt 16 via vacuum 17 and/or through foraminous belt 32 via vacuum 38), interlacing the fibers of the upper web with the fibers of the lower web using water jets 35 (col. 8, lines 4-64), and drying and reeling up of the obtained composite nonwoven (see dryer 42). The lower web 20 comprises artificial and/or synthetic fiber having a length between 15 and 80 mm (see col. 13, lines 1 and 3 disclosing a length of 38 mm) and a dtex degree of at least 1.7 dtex (see col. 12, line 67 disclosing 6.0 denier and col. 13, lines 1-2 disclosing 3.0 denier), as in claim 1. The natural fibers of the upper web 18 have a length between 0.5 and 8 mm (see col. 6, lines 16-36), as in claim 1. Welchel discloses the use of polyester fibers for the lower web 20 (col. 12, line 67 and col. 13, line 2), as in claim 2.

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The lower web is disclosed as 48.8 g/m² (col. 13, lines 13-14) which is within the range recited in claim 3. The matrix fibers (which form the lower web 20) are disclosed as making up 40-50% of the composite nonwoven by weight, while the absorbent fibers (which form the upper web 18) are disclosed as making up 50-60% of the composite nonwoven (col. 3, lines 30-31), as in claims 6 and 9. The natural fibers are disclosed as cellulose fibers as in claim 7 (col. 4, line 38). The composite is creped or brushed (col. 9, line 23-26), which is a "softening step" as in claim 12. Regarding claim 13, an installation for carrying out the process is disclosed by Welchel, as shown in Fig. 3.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welchel et al (US 6,022,818).

Welchel discloses a method as in claim 1, and the interlacing of the fibers is obtained by water jets of a hydraulic entangling unit 34, as described in col. 8, lines 17-64. The number of jet manifolds is disclosed as 3-4 (col. 8, lines 34-35 and col. 13, lines 35-36), which forms "between 2 and 12" water jets as in claim 4. Each manifold (which forms the "water jet" of claim 4, lines 2-4) has a single row of holes (col. 13, lines 40-41). The manifold has a perforated plate in which the holes are formed (see, e.g.

Fig. 42 of Evans 3,485,706, which Welchel discloses is incorporated by reference and shows the type of hydroentangling apparatus used; col. 8, lines 17-21). The holes of each row are spaced as claimed (see col. 13, lines 40-42). The water pressure is disclosed as 400 psi (col. 13, line 49), which is about 28 bar. The recitation of the rows being spaced 0.5-2mm apart does not further define the claimed method over that of Welchel, since the claim encompasses the embodiment of only one row (see claim 4, line 4).

Welchel discloses a diameter of 0.01778 cm (0.007 inches) in col. 8, line 33 and col. 13, line 45, which is about 177.8 micrometers. This diameter is slightly larger than the claimed 80-160 micrometers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a hole having a slightly smaller diameter in the hydroentangling step of Welchel, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Moreover, the size of the hole does not appear to further limit the actual manipulative steps of the claimed method, and it appears that it would be within the routine skill in the art to choose the optimal hole diameter for use in the method depending upon the desired end effects.

Regarding claim 8, Welchel discloses that the upper web 18 may include synthetic fibers (col. 4, lines 37-39), however the percentage of synthetic fibers is not disclosed. It is within the routine skill in the art to determine the optimal percentage of synthetic fibers based on the desired end properties for the web. It would have been

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obvious to one having ordinary skill in the art at the time the invention was made to use at least about 50% synthetic fibers in the pulp fiber web in the method of Welchel, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 10, Welchel discloses the use of exclusively cellulose fibers (col. 13, lines 21-26). The cellulose (pulp) fibers are disclosed as "diluted to any consistency which is typically used in conventional paper making processes", for example 0.05-0.5 percent by weight pulp fibers suspended in water (col. 6, lines 2-15). The concentration of the fibers in the aqueous dispersion is not disclosed in terms of "g/l". It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a concentration of pulp fibers of between 0.5 and 10 g/l in the aqueous dispersion in the method of Welchel, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

7. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welchel et al (US 6,022,818) in view of Noelle (2002/0160681).

Welchel discloses a method as claimed, however the prebonding of the lower web is performed by adhesive bonding, pattern bonding by calendar rolls, hot air bonding, or the like (col. 7, lines 22-65). The pre-bonding is not disclosed as by means of water jets, as in claim 5. Noelle discloses a process including forming a lower web

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10 by carding (paragraph 0068), pre-bonding the lower web (0068), laying natural (wood pulp) fibers 52 on the lower web, and interlacing the fibers of the upper web with the fibers of the lower web with water jets 53 (0071). Noelle teaches that the pre-bonding of the lower carded web is performed by means of water jets (40); see paragraph 0068. Pre-bonding of webs is known to be performed by water jets in order to form a web which is looser than that formed by adhesive or hot pattern bonding. It would have been obvious to one having ordinary skill in the art at the time the invention was made to pre-bond the lower web in the method of Welchel by means of water jets rather than adhesive or hot pattern bonding, in order to form a loose web which is more readily treated by further processing steps, as disclosed by Noelle.

Regarding claim 11, Welchel does not disclose subjecting the composite to an embossing step prior to drying. Noelle discloses an assembly 28 including a rotary drum 29 having an embossed surface 30 (0045,0061). The composite web travels over the drum and water jets act against the surface to form raised and recessed zones on the web which match the raised and recessed zones of the drum 28 (0063-0064, 0072). This forms a step of embossing as in claim 11, and occurs prior to drying (0072) as claimed. It would have been obvious to one having ordinary skill in the art at the time the invention was made to subject the composite web of Welchel to embossing on a patterned drum prior to drying, such as disclosed by Noelle, in order to pattern the web, for more pleasing aesthetic effects, while also creating a stronger product.

Allowable Subject Matter

8. Claim 14 is allowed.
9. Claims 15-19 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy B. Vanatta whose telephone number is 571-272-4995. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Welch can be reached on 571-272-4996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Amy B Vanatta/
Primary Examiner
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